

Bonnet Carre' Spillway Sampling Plan 2011

May 4, 2011

Background

The Mississippi River is expected to crest at or near 17.5 feet. The Mississippi River levees are rated to withstand river stages up to 20 feet. In order to relieve the pressure on the New Orleans area levees, the Bonnet Carre' Spillway will be opened between May 7-13/2011. When opened, a portion of the flow of Mississippi River water will pass through the spillway, enter Lake Pontchartrain and eventually make its way into Breton Sound, Chandeleur Sound and Mississippi Sound. The Louisiana Department of Environmental Quality (LDEQ) has developed this Sampling Plan to monitor the waters in Lake Pontchartrain for affects that the river water may have on water quality.

Parameters

Sampling during each site visit will provide a data set from two of the following three levels; Level 1 - routine parameter list associated with the LDEQ Ambient Water Quality Monitoring Network (AWQMN, see **Attachment 1**); Level 2 - a shortened list of critical parameters associated with anticipated water quality response (see **Attachment 2**); Level 3 - measurements taken with *in-situ* probes (see **Attachment 3**). LDEQ staff will sample all sites for Level 1 and Level 3 parameters prior to the opening of the Bonnet Carre' Spillway. Site 0138 will be sampled for Level 1 and Level 3 parameters, plus Chlorophyll-a, every two weeks thereafter. All other sites will be sampled for Level 2 and Level 3 parameters every two weeks until the water quality in Lake Pontchartrain returns to background levels. Level 1 and 2 parameters will be sampled at one meter depth. Level 3 parameters will be sampled at one meter depth, mid-depth, and at one-half meter from bottom. All samples will be handled in accordance with established standard operating procedures associated with the LDEQ AWQMN. When algal blooms are observed at the monitoring sites, additional sampling for algal taxonomy will be conducted to determine if harmful algal species are present. All sampling activity is subject to availability of adequate funding, and may be adjusted at any time.

Sampling Sites

LDEQ will sample the Lake Pontchartrain water at five strategic locations within the Lake Pontchartrain Basin. A sampling map has been developed and is included as **Attachment 4**.

LDEQ staff will sample at the following locations:

Site 0035 – Pass Rigolets
Site 0109 – Chef Menteur Pass
Site 0216 – Lake Pontchartrain at Causeway Bridge crossing # 6
Site 0138 – Lake Pontchartrain at Causeway Bridge crossing # 4
Site 0217 – Lake Pontchartrain at Causeway Bridge crossing # 2

Sample Dates

A list of tentative sample dates is included as **Attachment 5**

Data Management

Data will be transmitted to the LDEQ via specific Electronic Data Deliverable to the mainframe data base LEADMS. Data retrievals and summaries will be made available to all interested parties upon request, but issues associated with adverse human health (e.g., significant levels of *Mycrosistis*) will be transmitted to the State Health Officer as soon as possible.

Project Management

Direct-level project management will be accomplished by Jeff J. Dauzat, LDEQ Staff Scientist in the Southeast Regional Office (SERO) with support from Headquarters. Contact information for Mr. Dauzat and the SERO is:

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Southeast Regional Office
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New Orleans, LA 70123-5230
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Attachment 1

Routine parameters associated with the Ambient Water Quality Monitoring Network (**Level 1**)

The water samples will be analyzed for the following parameters:

Analysis	RL	Units	Method
True Color	5.00	PCU	110.2
Specific Conductance	10.0	umhos/cm	120.1
TDS	10.00	Ppm	160.1
TSS	4.00	Ppm	SM2540D
Chloride, Ion Chromatograph	62.5	Ppm	300.0
Sulfate	12.5	Ppm	300.0
Alkalinity	2.0	Ppm	310.1
			SM
Turbidity	1.00	NTU	2130B
Sodium	1.00	Ppm	200.7
Hardness	5.0	Ppm	130.2
Ammonia-Nitrogen	0.10	Ppm	350.3
TKN	0.10	Ppm	351.2
Nitrate+Nitrite Nitrogen	0.05	Ppm	353.2
TP	0.05	Ppm	365.4
TOC	2.00	Ppm	415.1
Chemical Oxygen Demand	20.00	Ppm	410.4
Biochemical Oxygen Demand 5 day	2.00	Ppm	SM5210B

Attachment 2

Short list of critical parameters associated with anticipated response of lake water quality (**Level 2**)

<u>Analysis</u>	<u>RL</u>	<u>Units</u>	<u>Standard Method</u>
TSS	4.00	Ppm	SM2540D
Turbidity	1.00	NTU	2130B
TKN	0.10	Ppm	351.2
Nitrate+Nitrite Nitrogen	0.05	Ppm	353.2
TP	0.05	Ppm	365.4
Chlorophyll-a	1.00	Ug/L	EPA 447 (HLPC)

Attachment 3

In-situ parameters (**Level 3**)

Sample depth (m)

Temperature (⁰C)

Conductivity (umhos/cm)

Salinity (ppt)

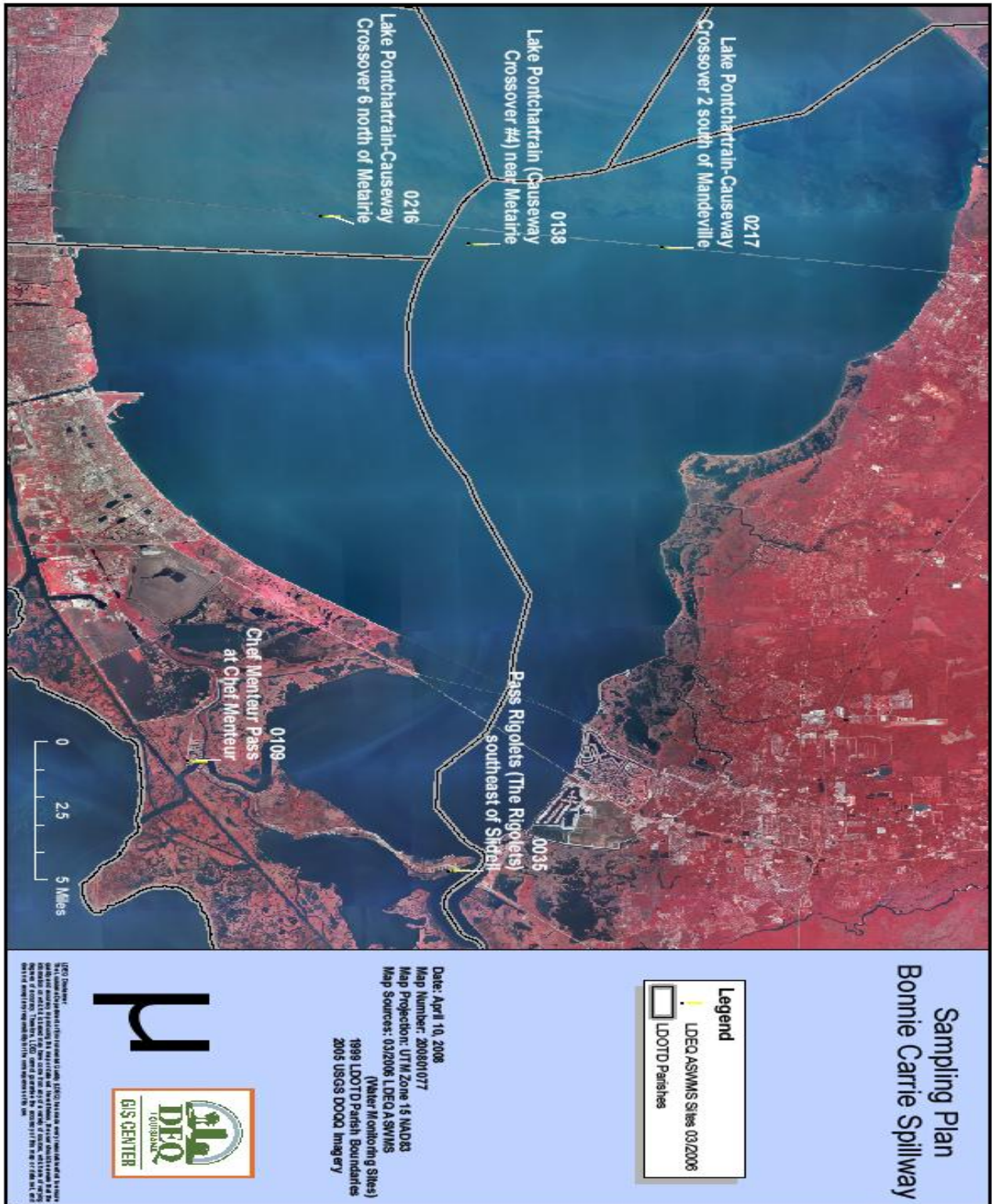
pH (SU)

Dissolved Oxygen (mg/L)

% Dissolved Oxygen

Attachment 4

Map of sampling locations



Attachment 5

Tentative Sample dates

5/3/2011 - Background samples at Sites 0216, 0138 and 0217

5/5/2011 – Background samples at Sites 0035 and 0109

5/12/2011 – All sites

5/24/2011 – All sites

6/7/2011 - All sites

6/21/2011 – All sites

7/6/2011 - All sites

7/19/2011 – All sites

8/2/2011 - All sites

8/16/2011 – All sites

8/30/2011 - All sites

9/13/2011 – All sites

9/27/2011 - All sites

10/11/2011 – All sites

10/25/2011 - All sites

11/8/2011 – All sites

11/22/2011 – All sites